

Coal Fly Ash Release

Fact Sheet

Revised as of February 13, 2009



The Tennessee Department of Health (TDH) is partnering with federal, state, and local government agencies to ensure that the health of residents in Roane County remains a priority as cleanup of the Tennessee Valley Authority (TVA) coal fly ash site continues. TDH has conducted a health needs assessment, reviewed environmental data, and continues to test air, water and soil samples at our laboratory. The following information reminds people about the importance of avoiding exposure to coal ash, provides tips of what to do if you come in contact with the ash and gives basic information about TDH's role in protecting public health.

Protecting Public Safety

The coal ash posed the greatest risk to people when the structure failed and ash was released into the river and surrounding properties. Since that time, several agencies have been working to prevent and minimize public exposure to released coal ash. The U.S. Environmental Protection Agency (EPA), the federal Agency for Toxic Substances and Disease Registry (ATSDR), the Tennessee Department of Environment and Conservation (TDEC) and the TDH assigned scientists, risk assessors and environmental specialists to determine the hazards presented by the coal fly ash release. All of the environmental data to date show that public and private drinking water supplies are safe. Skin irritation may occur from direct contact with the coal fly ash, but this can be minimized by avoiding contact with the material and washing exposed skin and clothing. State and federal regulators have also required precautions be put in place to keep as much ash as possible from becoming airborne to prevent its inhalation. These agencies continue to work together to protect public safety.

Health Needs Assessment

TDH, with assistance from the Centers for Disease Control and Prevention (CDC), conducted a health needs assessment to determine people's health needs after the release. Staff went door-to-door to interview residents who lived within 1.5 miles of the spill to ask questions about their health before and after the accident. Fact sheets and contact numbers were distributed to residents.

Staff is reviewing information from these interviews and will provide information about the results of the health

needs assessment. The results of the survey will be available at the Roane County Health Department.

Environmental Epidemiology

Health assessors reviewed, and in the future will continue to review, environmental data to determine any potential health exposure hazard to the public. Air, water, ash, soil and sediment data were reviewed to determine if any potential health issues existed. Reports will be prepared to explain the data reviews findings about the potential health effects of the coal ash release.

TDH has public health laboratories or state labs in Nashville and Knoxville that are testing environmental samples. The state labs are certified to provide reliable measurements, using EPA methods that are accurate and have been determined to be reliable by the scientific and legal communities. The state lab has tested samples of air, water, ash, soil and sediment collected by TDEC which are independent of TVA's testing.

About Environmental Exposure

There are several ways that you can come into contact with coal ash.

- *Contact with your skin.* If you get coal ash on your skin, it could cause irritation. These chemicals cannot pass through skin into the body, so dermal exposure does not cause coal ash to get into your body.
- *Inhalation or breathing.* If you breathe high levels of coal ash for long periods of time, it could cause respiratory problems.

- **Ingestion.** This can happen when you get it on your hands then put your hands near your mouth, especially while eating or smoking.

Please see our Web site for more details about what it means to be exposed to chemicals:

<http://health.state.tn.us/environmental/exposure.htm>.

Is exposure likely to cause harm?

Testing of the coal ash has shown that the concentrations of metals in coal ash are low. If metals in the coal ash are at a high enough concentration, and if you are exposed to it for a long time, it could cause some adverse health effects. If you avoid touching the coal ash and wash your hands regularly, your risk of any health effects will be extremely low. Even if you cannot avoid the coal ash, the metals are not likely to be absorbed into your body.

Breathing ash, or any dusty material, regularly over an extended period has the potential to cause adverse health effects. TDEC has required TVA to take measures to prevent the ash from becoming airborne as much as possible. All sample results for particulate matter to date indicate that air quality meets National Ambient Air Quality Standards.

Walking on the ash poses the greatest immediate safety hazard. Because the ash is in water and on land, you cannot see where the land ends and the water begins and the wet ash can collapse under the weight of a person.

Biomonitoring for heavy metals

Testing people for environmental chemicals is called biomonitoring. TDH has been asked if the general public should be tested for heavy metals using biomonitoring. The existing data show that there has not been a significant exposure pathway to humans from breathing air, drinking water from the water treatment plants or drinking from private wells. Most people do not have extended physical contact with the ash. Therefore, TDH does not recommend biomonitoring in the community near the fly ash release. If anyone wants to be tested for metals, they should talk with their health care provider. TDH has provided area health care providers with information about the coal fly ash and has given them contact information to consult with medical toxicologists at CDC in the event a need is determined.

How to avoid exposure to the coal ash

Stay away from the coal ash as much as possible. Do not let your children or pets play in the coal ash. Wash thoroughly including your hands, clothes and shoes if you, your children or pets come in contact with the ash. Basically, wash the same way you would clean up after mud exposure.

While every effort is being made to keep dust from becoming airborne, if you see visible dust generated from construction equipment, vehicles or windblown emissions from the ash, move indoors to your home or car. Once inside, close windows and doors. There are air monitoring stations around the site. If they detect elevated levels of fly ash dust, then additional dust suppression measures will be taken. These measures would include more watering of the ash and temporarily stopping activity at the site.

Occasional exposures for brief periods of time should not pose a threat.

Talk to your health care provider

If you still have concerns about changes in your health after the coal ash release, tell your health care provider. Although we have not identified any community-wide health issues, each person is different. Your own medical provider knows you best. TDH provided training on January 21 and 22, 2009, to area health care providers about the coal ash. We have talked with most of the health care providers in the area to make sure they know the situation and what they can do. We have given them guidance on the best ways to ensure your health.

Federal government assistance

EPA mobilized its emergency response unit in response to the coal ash release. EPA's team of experts included environmental specialists, risk assessors and data managers. EPA collected environmental samples to test for the presence of coal ash. ATSDR reviewed EPA data and consulted with the EPA staff as to what the data means for human health as part of the federal environmental response.

State government's involvement

In addition to the state Department of Health, a number of state agencies have responded to the coal ash release. TDEC is overseeing the cleanup and investigation into the cause of the release. TDEC continues independent sampling of air, drinking water, private well water, river water, soil and ash. TDEC is also responsible for making sure that TVA properly cleans up the coal ash. The Tennessee Wildlife Resources Agency (TWRA) is conducting fish and wildlife surveys in the area near the coal ash spill. The Tennessee Emergency Management Agency kept the emergency phase of the response organized and documented.

About Coal Ash

Coal ash is a by-product of burning coal to produce energy. Coal ash is a gray, powdery, material that is leftover after coal is burned. The coal fly ash is collected by air pollution control equipment at the power plant. Coal ash is dusty. It is often kept wet to prevent it from getting into the air.

Metals in Coal Ash

Metals found in coal ash include: arsenic, beryllium, cadmium, chromium, lead, selenium, thallium and vanadium.

Coal Ash and Wildlife

TWRA is monitoring fish, shellfish and wildlife in the area. TWRA advises that fishing should be avoided in the lower section of the Emory River, where the spill occurred, and that existing advisories for Watts Bar Reservoir should be followed. Information on existing advisories in the reservoir can be found on TDEC's Web site at <http://www.tn.gov/environment/wpc/publications/advisories.pdf>. TDEC will issue additional advisories if fish tissue contaminant levels exceed protection criteria.

Air

As the weather gets warmer, the ash will begin to dry. Dust may become a concern. TDEC has required TVA to take action to prevent dust and is overseeing a number of measures put into place to help keep the dust from becoming airborne. They include straw and seeding the site, applying an encrusting agent and installing wheel

washers for trucks leaving the site. TDEC's Division of Air Pollution Control has set up two air monitors near Lake Shore Drive. One sampler continuously collects fine particulate matter. This sampler has been in operation since January 21, 2009. The other sampler collects particles that can be analyzed for metals. All sample results for particulate matter indicate that air quality meets National Ambient Air Quality Standards.

Sample results from the metal analysis had not yet been returned from the state lab as of this publication. Metals analyses on the air samples will include aluminum, arsenic, barium, beryllium, cadmium, chromium, lead, manganese, mercury, selenium, thallium and vanadium.

Information about air sampling results and additional measures being taken for air quality protection, including the "Fugitive Dust Control and Suppression Action Plan" that TVA has submitted to the state, can be found on TDEC's Web site.

Water

Recreational Safety

We are aware that many people are concerned about boating, swimming and fishing. People are advised to avoid contact with the ash, which is in the lower Emory River. At this time, recreation on Watts Bar outside the lower Emory River impact zone has not changed from the condition that existed before the ash spill. It is safe to swim, boat and eat most kinds of fish. See the Web link in the "Coal Ash and Wildlife" section for more details on the existing fish consumption advisories. Monitoring will continue and decisions about appropriate activities will be continually assessed using the current sampling data.

Municipal water

River water was sampled and tested every day between January 2-22, 2009, at the Kingston and Rockwood water treatment plants. No concerns were detected in water quality either in the water going into the water treatment plants or in the finished water being piped into people's homes and area businesses. Weekly testing continues. All sample results indicate that drinking water meets drinking water standards.

Private well water

After the spill, the public was advised not to drink from private water wells until the water had been tested. All homes within four miles were offered free testing of their well water. So far nearly 100 wells have been tested. To date, no metals associated with coal ash have been found above primary drinking water standards in any private water well.

TDEC will test well water within a four-mile radius of the site upon request. To set up an appointment, call 1-888-891-8332 or 865-594-6035.

Soil and Ash

TDEC collected 29 soil and ash samples, which were analyzed at the state lab. Sixteen were soil from impacted residences, as well as some background samples from outside the impacted area. The remaining 13 samples were ash. Soil and ash samples are being analyzed for total metals, TCLP metals (which helps to determine how likely metals are to leach from the material), radioactivity and polynuclear aromatic hydrocarbons.

For residential soil, the results indicated that concentrations were well below any levels that could cause harm. The ash contains some metals, including arsenic, and some radioactive materials of natural origin. TDH believes that, based on current sampling results, there should be no adverse health effects from accidentally and occasionally ingesting the ash. The metals and radiation should not contribute to adverse health effects from breathing coal ash containing dust, though breathing any kind of dust can aggravate pre-existing respiratory conditions.

We encourage everyone to avoid contact with coal ash. If you do contact the ash, then practice good hygiene, especially washing your hands before eating or smoking. Remember, the metals are bound to the ash. Occasional exposures for brief periods of time should not pose a threat.

Useful Web sites

Tennessee Department of Health:
<http://www.tn.gov/health>

Tennessee Department of Environment and Conservation:
<http://www.tn.gov/environment>

TVA:
<http://www.tva.gov>

Environmental Protection Agency:
<http://www.epa.gov/region4>

Important Numbers

TVA public information: 1-865-717-4006

TVA Outreach Office: 1-865-632-1700

TDEC: 1-888-891-8332

If you have questions about your health and coal ash, contact:

Tennessee Department of Health toll-free at
1-800-404-3006 or the

Roane County Health Department
1362 N Gateway Ave
Rockwood TN 37854
1-865-354-1220



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